

#####

Newsletter #143 October 14th 2020

#####

If the newsletter does not look good in your email, check the pdf [here!](#)

News from the front: engineering reports (Roger Smith)

The ZTF engineering team noted diurnal variation in cold head temperature increasing up to a factor of ten, since mid July. Then on Oct 9 at 4:30am, the Southwest cryocooler's "return line pressure" dropped suddenly and the SW cold head began to heat up. Clearly, a partial blockage had occurred. We managed to limp through the night on Thursday and to lose only the nights of Friday and Saturday which were partially cloudy.

Faced with the prospect of having to bring the instrument back to campus to clean the cryocooler plumbing, at significant cost, to losing weeks of observing time, all in the midst of a pandemic, we resorted to an alternative experiment which seems to have been a total success.

Running the cryocoolers while warming the detector cold-plate to 320K allowed contaminants to be flushed through the cold heads. (They remained at 295K during the process.) The success of this method was immediately evident since the return line pressures remained normal on both cold heads as they cooled below freezing. To reduce the likelihood of another blockage, the activated charcoal absorbers were also replaced.

In future, whenever the diurnal variation of cold head temperature increases, we will look for an opportunity to repeat the procedure during cloudy weather.

Meanwhile, the theory that high refrigerant pressure might also contribute to the diurnal variation will be tested in the lab in coming weeks using a spare cryocooler.

News from working groups

AGNs and TDEs: "We are tracking four active TDEs with Swift and we obtained a radio detection with the VLA for one of them. Meanwhile we are also busy converting our search pipeline to the new Marshal. Looking forward to seeing everyone at the collaboration meeting next week!"

Cosmology with SNe Ia: “We are currently creating the overview of the SNIa cosmology sample, which will be discussed at next week's meeting. We are also finalizing the study of ZTF19abqhb - a nearby SNIIP detected only hours after explosion. As a SNIa previously exploded in the same galaxy we will be able to directly evaluate different methods for determining SNIIP distances. If successful, this creates new potentials for cosmology in the nearby universe.”

Multimessenger: “A detected high-energy neutrino, IC201007A, was detected and we did ZTF follow-up, but unfortunately we could not find any counterpart candidates.”

Physics of supernovae and relativistic explosions: “Rachel gave an overview of her new projects on infant SNe. Recently, she published a paper on the frequency of flash features in 2-day old SNe II using the high-cadence data from the ZTF partnership survey. She and her team concluded that a large fraction of progenitors of Type II SNe have episodes of elevated mass before explosion. This study sparked several follow-up questions on 1) duration of flash features, 2) correlations with light curve properties and physical properties of the SNe, 3) and whether ionisation or the CSM interaction determine the type and duration of flash features that we see. She aims to address these questions using the full 3-year ZTF sample. Furthermore, Mansi gave an overview of Fritz, and we welcomed the new students and postdocs who joined our working group.”

The papers corner:

Please keep us updated about your submitted/published papers, they will be advertised here.

Please send Joy Painter, the Astronomy Librarian at Caltech, links to papers as soon as they are published. They will be kept track of [here](#).

Reminders:

- PublicAlerts: There is a [link](#) to the alerts archive on the [website](#)!

- Please help us keep track of all the available softwares! A preliminary list is available on the [twiki](#). Let us know if you are building a software which you think could benefit (or be relevant to) a large portion of the collaboration.

- **ZTF general slack channel:** Please join through this [link](#)!

- If you want to get access to the **ZTF data** via the IRSA interface, please request data access to the communication coordinators: ztf.communication.coordinators@gmail.com

- **Archive GUI** now ready! The interactive image search, filtering and visualization tool is now ready ().

- The **ZTF Twitter account** is now active! <https://twitter.com/ztfsurvey> Re-tweet @ztfsurvey!

- To use the **url shortener**(e.g. during telecons, talks, in emails), navigate to <http://zwicky.tf/shorten> (username: ztf password:16chips) and type in the URL you want shortened.
- The **Wiki page** is active! Check it out at <http://zwicky.tf/wiki>. To request access, please email us at [ZTF.communication.coordinators@gmail.com](mailto:ZTF.communication coordinators@gmail.com)

“My best work is always done... when I'm experimenting. If I stop experimenting I feel it just becomes a drudgery.” - William Dobell

Have a good and productive week!

Erik and Igor